## REMARKS

This is intended as a full and complete response to the Office Action dated October 19, 2006, having a shortened statutory period for response set to expire on January 19, 2007. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-44 are pending in the application. Claims 1-44 remain pending following entry of this response. Claims 22 and 38 have been amended. Applicants submit that the amendments do not introduce new matter.

Claim Rejections - 35 U.S.C. § 101

Claims 38-42 stand rejected under 35 U.S.C. § 101. The Examiner suggests that these

> claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material per se.

*Office Action*, p. 2. Respectfully, Applicants traverse this rejection.

To support this rejection, the Examiner recites portions of the first four paragraphs of MPEP 2106.01 and declares, without analysis, that "Claim 38 merely claims nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, which does not make it statutory." As described in the MPEP, Nonfunctional descriptive material" includes but is not limited to music, literary works, and a compilation or mere arrangement of data." Claims 38-42 do not recite "a mere arrangement of data," or anything similar. Moreover, contrary to the Examiner's assertions, claim 38 (and dependent claims 39-42) are, in fact, clearly directed to "a series of steps or acts to be a process." Specifically, claim 38 is directed to "a computer readable medium containing a program which, when executed, performs a process for identifying correlated columns from database tables." "When a computer program is claimed in a process where the computer is executing the computer program's

instructions, USPTO personnel should treat the claim as a process claim." MPEP 2601.01. As claimed, the process includes a determining step, an analyzing step, and a computing step. Thus, Applications submit that claim 38 is not "Nonfunctional descriptive material," and respectfully request that this rejection be withdrawn.

Claim Rejections - 35 U.S.C. § 102

Claims 1-44 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Sandler et al.* (hereinafter "*Sandler*")(US Patent No. 2003/0217033 A1, filed May 17, 2002). Applicants respectfully traverse this rejection.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). In this case, *Sandler* does not disclose "each and every element as set forth in the claims."

Regarding claims 1, 22, and 43:

*Sandler* does not disclose a method for identifying correlated columns from database tables that includes a step of determining correlation attributes for a first column and a second column from one or more database tables, the correlation attributes describing for each column at least one of the column and content of the column, as recited by claims 1. Claims 22 and 43 recite a similar limitation.

The Examiner suggests that *Sandler* discloses this recited limitation at *Sandler*, ¶ 235 (lines 7-12), Fig. 18A 1806 and 1804. Specifically, the rejection provides:

> [*Sandler* discloses] determining correlation attributes for a first column and a second column from one or more database tables, the correlation attributes describing for each column at least one of the column and content of the column (Fig. 18A, items 1806, and 1804, Page 17, [0235], lines 7 - 12; wherein the step of mapping which includes all of the values in field K1 1804 that have the same

> values in field F1 1806 corresponds to the step of determining the correlation attributes as claimed; wherein values F1 corresponds to the first column claimed; and wherein values in K1 corresponds to the second column claimed; Sandler);

*Office Action*, p. 3-4. However, the cited passage is in fact directed to a description of an "aggregation operation" that aggregates data values from one database table and stores the aggregated values in another database table. *Sandler*, ¶ 234. As disclosed in *Sandler*, "aggregation operations are used to represent many-to-one relations, and occur only after the table rule has been applied, to convert a combined table (which results from application of various fuse, link, and loop operations) into the target table." *Sandler*, ¶ 234.

In the example from *Sandler* cited by the Examiner, data values for one column of a database table (Table, T1, Column "F1" 1806) may be repeated in different rows of the "F1" column 1806. The example describes a process of aggregating values from a second column "K1" of the T1 table for any such repeated values in the "F1" column. Specially, the values from the "K1" column are added together and stored in another table (Target table 1802, Column "F', 1802). No correlation attributes, describing either the column or the content of the column, are disclosed, or even be useful in performing the aggregation process.

Similarly, *Sandler* fails to disclose steps of comparing the correlation attributes from the first and second column and identifying similarities between the first and second column on the basis of the comparison. Here, the Examiner again cites to *Sandler*, ¶ 235, Fig. 18A 1806 and 1804. However, as just discussed, this material is in fact directed to a process of performing an "aggregation operation" where "all of the values in field k1 data values from one column that share the same F1 data value are added together. First, no similarity between columns is identified, instead repeating data values in a single column are identified and used to determine a value to store in another database column; namely, the sum of all the values in the K1 column of table T1 that share the same F1 value.

Claims 1 and 22 also recite steps of "on the basis of the identified similarities, determining whether the first and second column are correlated, and merging the first and second columns only if the columns are determined to be correlated." Here again, the Examiner cites to the portion of the "aggregation operation" described at *Sandler*, ¶ 235, Fig. 18A 1806 and 1804.

As should be clear by now, this passage has nothing to do with a method for identifying correlated columns from database tables. Instead, the cited passage describes a process of determining a set of values from one column, adding them, and storing the resulting sum in a second database table. Specifically, regarding the merging step, the Examiner suggests as follows:

> [*Sandler* discloses] merging the first and second columns only if the columns are determined to be correlated (Fig. 18A, items 1806,1804,1802, and 1810, Page 17, [0235], lines 7 -15; all of the values in field K1 1804 that have the same values in filed F1 1806 must be combined to provide a value for filed F 1806 must be **combined to provide a value for filed F 1810 in table TARGET 1802**, Sandler).

*Office Action*, p.4 (emphasis in original). However, no columns are merged at all in the tables shown in Figure 18. That is, the "combined" values stored in the "F" column of table 1802 are not the result of merging two correlated columns as suggested by the Examiner. Instead, as stated, some data values from the "F1" column have been added together (based on a common value in the "K1" column) and stored in a second table, specifically, the "F" column in target table 1802.

As stated, the Examiner suggests that "F1" column "corresponds to the first column claimed" and the "K1" column "corresponds to the second column claimed." *Office Action*, p. 4. In such a case, a merger of these two columns would include the following values in a single merged column: {A, A, B, K, B, 1, 2, 3, 4, 5}. Clearly, however, no such column results from the "aggregation operation" disclosed in *Sandler*, and no such column is shown in Figure 18. Instead, the "F1" and "K1" columns remain unchanged after the "aggregation operation" is performed and the values of the "target table" include the "combined values" calculated from the contents of the "F1" and "K1" columns.

Accordingly, for all the foregoing reasons, applicants submit that *Sandler* does not disclose a method, computer-readable medium, or system for identifying correlated columns from database tables that includes the steps recited by claim 1, 22, and 43, and therefore, respectfully request that this rejection be withdrawn.

Regarding claims 2-16 and 23-27:

Claims 2-16 and 23-27 each ultimately depend from one of claims 1 or 22. As Applicants believe the above remarks demonstrate that the base claims are allowable, Applicants believe that the respective dependent claims are also allowable, and allowance of these claims is respectfully requested.

Regarding claims 17, 38, and 44:

*Sandler* does not disclose a method for identifying correlated columns from database tables that includes, among others, a step of determining a degree of correlation between the at least two columns using the determined metadata and the analyzed content, as recited by claim 17. Claims 38 and 44 recite a similar limitation. In rejecting these claims, the Examiner suggests that

> [*Sandler* discloses] determining a degree of correlation between the at least two columns using the determined metadata and the analyzed content (Page 18, [0251], lines 3 - 10, Sandler).

*Office Action*, p. 10. The cited passage provides:

> ... To identify these tables, the system consults the mappings that are stored in the metadata repository 204 for the model that is being applied. The set of tables produced at this step includes: (a) all the tables that depend (directly or indirectly) on the tables being edited; and (b) all the tables on which the tables identified in (a) directly depend. At step 1906, the system sets the vector N to the tables identified in step 1904.

*Sandler*, ¶ 251. The passage is, in fact, directed to process for updating one set of database tables, based on changes to another. Specifically, "a 'process' function of a minimal recalculation engine in accord with the present invention" is described. *Sandler*, ¶ 43. The "minimal recalculation" process "handles recalculation of target tables that are specified in the model when transactions change the source tables on

which the target tables depend." *Sandler*, ¶ 196. No "degree of correlation between the at least two columns" is determined at all, or even be useful for the "minimal recalculation" process. Instead, what set of database tables needs to be updated, based on edits made to the database, is determined. The correlation, or in particular, the claimed "degree of correlation" between any two particular tables is simply not determined (and is, in fact, irrelevant) to this process.

Accordingly, for all the foregoing reasons, Applicants submit that *Sandler* does not disclose a method, computer-readable medium, or system for identifying correlated columns from database tables that includes, among others, a limitation of determining a degree of correlation between the at least two columns using the determined metadata and the analyzed content, as recited by claim 17, 38, and 44, and therefore, respectfully request that this rejection be withdrawn.

Regarding claims 18-21 and 39-42:

Claims 2-21 and 39-42 each ultimately depend from one of claims 17 or 38. As Applicants believe the above remarks demonstrate that *Sandler* does not anticipate these two independent claims, Applicants believe that these dependent claims are allowable, and allowance of these claims is respectfully requested.

Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

## Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted, and
**S-signed pursuant to 37 CFR 1.4,**

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